REMARKS

This is intended as a full and complete response to the Office Action dated August 23, 2005, having a shortened statutory period for response set to expire on November 23, 2005. Please reconsider the claims pending in the application for reasons discussed below.

Claims 1-20 remain pending in the application and are shown above. Claims 1-20 stand rejected by the Examiner. In the specification, paragraph 29 is amended due to informality. Claims 4, 6-10, 17, and 20 are amended to correct informalities and clarify the invention without introducing new matter. The amendments are supported by the Specification and Drawings without introducing new matter. Claims 18-19 are canceled without prejudice. Applicant reserves the right to pursue the subject matter of claims 18-19 in a continuation application. Reconsideration of the rejected claims is requested for reasons presented below.

Claim Rejections – 35 USC § 102

Claim 8 stands rejected under 35 USC § 102(e) as being anticipated by *Uzoh et al.* (US Patent No. 6,692,588). Applicant respectfully traverses the rejection.

Uzoh et al. discloses using a heating lamp to heat a wafer and de-oxygenated DI water in order to simultaneously clean and anneal the wafer in a cleaning/annealing chamber. (*See*, column 4, lines 1-21.) The de-oxygenated DI water of *Uzoh et al.* can be preheated prior to being delivered into the rinse/anneal chamber or heated by the heating lamp inside the rinse/anneal chamber for simultaneous cleaning/annealing. (*See*, column 4, lines 1-3 and lines 22-26.)

Since simultaneous cleaning/annealing is in contrast to annealing a substrate at an annealing station subsequent to a separate preheating process, *Uzoh et al.* does not teach, show or suggest annealing a substrate in an annealing station subsequent to preheating the substrate, wherein the preheating is conducted in a separate spin rinse dry cell. Accordingly, *Uzoh et al.* does not teach, show or suggest plating a conductive layer onto a substrate, rinsing the substrate of unwanted residue chemicals, preheating the substrate during the rinsing process, and annealing the substrate at an annealing

station subsequent to the preheating process, wherein the preheating are conducted in a spin rinse dry cell, as recited in claim 8 and claims dependent thereon. Withdrawal of this rejection is respectfully requested.

With regard to claims 13-14, it is not clear from the Office Action whether claims 13-14 are subjected to any 35 USC § 102 or 35 USC § 103 rejections. However, claims 13-14 which depend on claim 8 are believed to be in condition for allowance as discussed above as applied to claim 8. Specifically, *Uzoh et al.* does not describe rinsing and annealing in separate cells/chambers or preheating and annealing in separate cells/chambers.

Accordingly, *Uzoh et al.* does not teach, show or suggest rinsing a substrate, preheating the substrate, annealing a substrate at an annealing station subsequent to the preheating process, wherein the preheating is conducted in a spin rinse dry cell and preheating the substrate comprises applying radiant heat to the substrate during the rinsing, as recited in claim 13. In addition, *Uzoh et al.* does not teach, show or suggest rinsing a substrate, preheating the substrate, annealing a substrate at an annealing station subsequent to the preheating process, wherein the preheating is conducted in a spin rinse dry cell, and the rinsing and preheating steps are conducted simultaneously, as recited in claim 14. Therefore, allowance of claims 13-14 is respectfully requested.

Claim Rejections – 35 USC § 103

Claims 1-6 stand rejected under 35 USC § 103(a) as being obvious over *Cheung et al.* (US Patent Application Publication No. 2002/0130046) and *Uzoh et al.* Applicant respectfully traverses the rejection.

Uzoh et al. is discussed above. *Uzoh et al.* does not describe separate cells/chambers for heating and annealing a substrate. *Uzoh et al.* does not teach, show or suggest heating a substrate in a cleaning cell and transferring the substrate from the cleaning cell to an annealing station before annealing the substrate at the annealing station, as recited in claim 1 and claims dependent thereon.

Cheung et al. discloses a method of forming a copper interconnect and in-situ annealing of a copper layer inside an integrated processing system after the copper layer is deposited by the integrated processing system. *Cheung et al.* does not teach,

show or suggest heating a substrate in a cleaning cell, as recited in claim 1 and claims dependent thereon and lacking in *Uzoh et al.*

Therefore, *Cheung et al.* and *Uzoh et al.*, alone or in combination, do not teach, show, or suggest a method for processing a substrate including plating a conductive layer onto a substrate, transferring the substrate from a plating cell to a cleaning cell, heating the substrate in the cleaning cell, transferring the substrate from the cleaning cell to an annealing station, and annealing the substrate at the annealing station, as recited in claim 1, and claims dependent thereon. Withdrawal of the rejection is respectfully requested.

Claim 7 stands rejected under 35 USC § 103(a) as being obvious over *Cheung et al.* and *Uzoh et al.*

Cheung et al. and *Uzoh et al.* have been discussed above.

Applicant further traverses the rejection of claim 7, which depends on claims 1 and 6, on grounds that *Cheung et al.* and *Uzoh et al.*, alone or in combination, do not teach, show or suggest heating a substrate in a cleaning cell, transferring the substrate from the cleaning cell to an annealing station, and annealing the substrate at the annealing station, as recited in claim 1 and claims dependent thereon. Withdrawal of the rejection is respectfully requested.

Claims 9-11 stand rejected under 35 USC § 103(a) as being obvious over *Uzoh et al.* and further in view of *Kimura et al.* (US Patent Application Publication No. 2001/0024691). Applicant respectfully traverses the rejection.

Uzoh et al. is discussed above.

Kimura et al. discloses removal of particles by a cleaning unit and/or drying of a substrate by a spin-dry unit after copper plating. (*See*, Paragraph 10.) *Kimura et al.* does not teach, show or suggest annealing a substrate at an annealing station subsequent to a separate preheating process by preheating the substrate in a cleaning cell, as lacking in *Uzoh et al.*

Therefore, *Uzoh et al.* in view of *Kimura et al.*, alone or in combination, do not teach, show, or suggest plating a conductive layer onto a substrate, rinsing the substrate of unwanted residue chemicals, preheating the substrate during the rinsing process, and annealing the substrate at an annealing station subsequent to the

preheating process, wherein the preheating is conducted in a spin rinse dry cell, as recited in claim 8 and claims 9-11, which depend on claim 8. Withdrawal of the rejection is respectfully requested.

Claim 12 stands rejected under 35 USC § 103(a) as being obvious over *Uzoh et al.* and *Kimura et al.* and further in view of *Cheung et al.* Applicant respectfully traverses the rejection.

Uzoh et al., *Kimura et al.* and *Cheung et al.* have been discussed above.

Applicant further traverses the rejection of claim 12, which depends on claims 8 and 9, on grounds that *Uzoh et al.* and *Kimura et al.* in view of *Cheung et al.*, alone or in combination, do not teach, show or suggest plating a conductive layer onto a substrate, rinsing the substrate of unwanted residue chemicals, preheating the substrate during the rinsing process, and annealing the substrate at an annealing station subsequent to the preheating process, wherein the preheating is conducted in a spin rinse dry cell, as recited in claim 8, and claims dependent thereon. Withdrawal of the rejection is respectfully requested.

Claims 15-16 stand rejected under 35 USC § 103(a) as being obvious over *Uzoh et al.* in view of *Ivanov et al.* (US Patent Application Publication No. 2004/0097071). Applicant respectfully traverses the rejection.

Uzoh et al. is discussed above.

Ivanov et al. discloses a method of electroless deposition of thin films by using heating and cooling to control the growth of the deposited films on a substrate in an electroless deposition chamber. *Ivanov et al.* does not describe preheating in a spin rinse dry cell and annealing in an annealing station, lacking in *Uzoh et al.*

Accordingly, *Uzoh et al.* in view of *Ivanov et al.* does not teach, show or suggest rinsing the substrate of unwanted residue chemicals, preheating the substrate during the rinsing process, and annealing the substrate at an annealing station subsequent to the preheating process, wherein the preheating is conducted in a spin rinse dry cell, as recited in claim 8 and claims 15-16, which depend on claim 8. Withdrawal of the rejection is respectfully requested.

Claim 17 stands rejected under 35 USC § 103(a) as being obvious over *Lubomirsky et al.* (US Patent Application Publication No. 2003/0131494). Applicant respectfully traverses the rejection.

Lubomirsky et al. discloses a spin rinse dry chamber for a semiconductor processing system. The spin rinse dry chamber of *Lubomirsky et al.* includes a heating element proximate a fluid channel in order to heat a rinsing fluid prior to the rinsing fluid entering a processing region and contacting a substrate. *Lubomirsky et al.* does not describe a radiant heating assembly to provide radiant heat to directly heat the substrate.

Applicant has amended claim 17 to include a radiant heating assembly connected to a rinsing cell and disposed to provide radiant heat to directly heat the substrate, as supported in the Specification and drawings, at least at paragraph 30 and Figure 4. Applicant respectfully submits that *Lubomirsky et al.* does not teach, show, or suggest the radiant heating assembly, as claimed in amended claim 17 and claims dependent thereon. Withdrawal of the rejection is respectfully requested.

With regard to claim 18, it is not clear from the Office Action whether claim 18 is subjected to any 35 USC § 102 or 35 USC § 103 rejections. However, claim 18 is cancelled without prejudice.

Claim 19 stands rejected under 35 USC § 103(a) as being obvious over *Lubomirsky et al.*

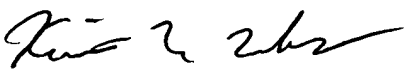
Applicant has cancelled claim 19 without prejudice and respectfully requests withdrawal of this rejection.

With regard to claim 20, it is not clear from the Office Action whether claim 20 is subjected to any 35 USC § 102 or 35 USC § 103 rejections. However, claim 20 depends on claim 17 and Applicant respectfully submits that *Lubomirsky et al.* does not teach, show, or suggest the radiant heating assembly, as claimed in amended claim 17 and claims dependent thereon. In addition, Applicant has amended claim 20 to further include a temperature monitoring device being configured to monitor the temperature of the substrate and control the application of electrical power to the radiant heating assembly, which is not described in *Lubomirsky et al.* Allowance of claim 20 is respectfully requested.

In conclusion, the references cited by the Examiner, alone or in combination, do not teach, show, or suggest the invention as claimed.

Having addressed all issues set out in the office action, Applicant respectfully submits that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted,



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